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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,336	09/30/2003	Makoto Tanaka	01-504	4040
23400	7590	06/15/2005	EXAMINER	
POSZ LAW GROUP, PLC 12040 SOUTH LAKES DRIVE SUITE 101 RESTON, VA 20191			TRAN, CHUC	
			ART UNIT	PAPER NUMBER
			2821	

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/673,336	Applicant(s) TANAKA ET AL.	
	Examiner Chuc D. Tran	Art Unit 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1 and 3-12 is/are rejected.
- 7) ☒ Claim(s) 2 and 13-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Allowable Subject Matter

1. The indicated allowability of claims 7-8 are withdrawn in view of the newly discovered reference(s) to Sievenpiper et al (USP. 6,433,756). Rejections based on the newly cited reference(s) follow.

Response to Arguments

2. Applicant's arguments filed 3/22/05 have been fully considered but they are not persuasive.

3. Applicants argue that claim 1 would have been understandable to one of ordinary skill in the art when read in light of the specification. The Examiner respectfully disagree. Even though when read in light of the specification, how the organize limitations in claim 1 makes a picture to read to the specification (See *MPEP*. 2171-2174).

Drawings

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "(31) in Fig. 2, 11-12, 16, 18-21, 23-24 and 28-29" has been used to designate both "the second antenna in claim 1 and the linear metal bars in claim 2". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and

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informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 3, 6 and 8-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Sievenpiper et al (USP. 6,433,756).

Regarding claims 1 and 3, Sievenpiper et al disclose a multiple frequency common antenna comprising: a substrate (30) (Col. 7, Line 20) having a band gap for prohibiting propagation of an electromagnetic wave on a surface in a particular frequency band (Sievenpiper et al. Col. 8, Line 14 & 30);

- a first antenna (10) for resonating in a first frequency band within the band gap (Sievenpiper et al. Col. 10, Line 9);
- a second antenna for resonating in a second frequency band out of the band gap (Col. 5, Line 19) (Col. 8, Line 28) (Fig. 5).

Regarding claim 6, Sievenpiper et al disclose that the first antenna (10) is an inverse L-shape antenna (Fig. 3).

Regarding claim 9, Sievenpiper disclose that the second antenna is a monopole antenna (Col. 3, Line 30).

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Regarding claim 8, Sievenpiper et al disclose that a dielectric material plate (12) disposed on the surface of the substrate sheet (30) (Fig. 1); wherein

- the first antenna (10) is an element pattern formed on the surface opposing to the substrate sheet of the dielectric material plate (Fig. 3).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 4-5, 7 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sievenpiper in view of Biswas et al (USP. 6,593,894).

Regarding claims 4-5, 7, Sievenpiper et al disclose a multiple frequency common antenna as set forth in the claims except the first antenna is a hula hoop type antenna with frequency higher or lower than the second frequency band. Biswas et al disclose disclose a multiple frequency common antenna comprising the first antenna is a hula hoop type antenna with frequency higher or lower than the second frequency band (Biswas et al, Col. 4, Line 40). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sievenpiper et al by using the first antenna is a hula hoop type antenna with frequency higher or lower than the second frequency band as taught by Biswas et al. The ordinary artisan would have been motivated to modify Sievenpiper et al in the manner described above for improving radiation in the plane of the antenna (See Abstract).

Regarding claims 10-12, Sievenpiper et al disclose a multiple frequency common antenna

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as set forth in the claims except the second antenna is a helical antenna, a non-uniform helical antenna, a linear conductor bar. Biswas et al disclose disclose a multiple frequency common antenna comprising the second antenna is a helical antenna, a non-uniform helical antenna, a linear conductor bar (Biswas et al, Col. 4, Line 40). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sievenpiper et al by using the second antenna is a helical antenna, a non-uniform helical antenna, a linear conductor bar as taught by Biswas et al. The ordinary artisan would have been motivated to modify Sievenpiper et al in the manner described above for improving radiation in the plane of the antenna (See Abstract).

Allowable Subject Matter

1. Claims 2, and 13-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 2 and 13-17, the references of the prior art of record fails to teach or suggest the combination of the limitations as set forth in the claims: the surface of each small metal plate arranged in two dimensions forms the surface of the substrate sheet, and specifically comprising a second substrate sheet having a frequency band out of the first frequency band as a band gap.

Citation of relevant Prior Art

Prior art Lam et al (USP. 5,541,614) disclose smart antenna system.

Prior art Yablonovitch et al (USP 6,262,495) disclose circuit and method for eliminating surface current on metals.

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Prior art Biswas et al (USP. 6,593,894) disclose highly directional receiver and source antennas using photonic band gap crystals.

Prior art Sievenpiper et al (US 20050017919) disclose circularly polarized antenna having improved axial ratio.

Prior art De Los Santos (USP. 5,923,225) disclose noise reduction system.

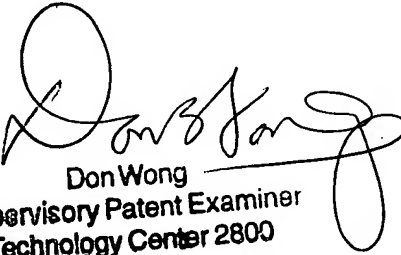
Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuc D. Tran whose telephone number is (571) 272-1829. The examiner can normally be reached on M-F Flex hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TC
June 9, 2005


Don Wong
Supervisory Patent Examiner
Technology Center 2800